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JC06 Rec'd PCT/PTO 25 MAR 2005
DKT. 13458-808003WO01

CHAPTER II

IN THE UNITED STATES INTERNATIONAL PRELIMINARY
EXAMINING AUTHORITY (IPEA/US)

COPY

PCT/US03/30033

26 September 2003 (26.09.03) 27 September 2002 (27.09.02)

INTERNATIONAL APPLICATION NO.
DRILL SHARPENER

INTERNATIONAL FILING DATE

PRIORITY DATE CLAIMED

TITLE OF INVENTION

Professional Tool Manufacturing LLC; Bernard, David A.; Christian, William; Harris, Scott; and
Mosttler, Keith

APPLICANT(S)

Mail Stop PCT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
ATTENTION: IPEA/US

Sir:

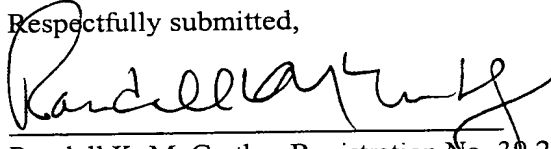
Enclosed herewith in connection with the above referenced PCT application are the following:

1. Reply to First Written Opinion of the International Preliminary Examining Authority (IPEA/US);
2. Replacement sheets; and
3. An acknowledgment postcard.

Please advise if anything further is required.

Respectfully submitted,

By:


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DKT. T3458-808003WO01
CHAPTER II

**IN THE INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY OF
THE UNITED STATES PATENT AND TRADEMARK OFFICE (IPEA/US)**

International Application No.: PCT/US03/30033
International Filing Date: 26 September 2003 (26.09.03)
Priority Date Claimed: 27 September 2002 (27.09.02)
Applicant: PROFESSIONAL TOOL
MANUFACTURING LLC
Inventors: BERNARD, David et al.
Title: DRILL SHARPENER

**REPLY TO FIRST WRITTEN OPINION OF THE INTERNATIONAL
PRELIMINARY EXAMINING AUTHORITY (IPEA/US)**

**Mail Stop PCT
Commissioner of Patents
P. O. Box 1450
Alexandria, VA 22313-1450
ATTN: IPEA/US**

Sir:

The Applicant provides the following response to the First Written Opinion ("Opinion") of the International Preliminary Examination Authority (IPEA/US) mailed 03 August 2004 (03.08.04). The Opinion provided a two (2) month period for response.

The Applicant believes this Response is being filed timely within the allotted time period, and hereby provisionally requests a one (1) month extension of time in the event receipt of this Response is adjudged to not fall within the original allotted time period.

Please find submitted herewith replacement sheets 11-14 to replace sheets 11-16 originally filed with the application.

With respect to each claim appearing in the international application based on the replacement sheets submitted herewith, the followings claims are

- | | |
|---|-------|
| 1. Unchanged | None. |
| 2. Cancelled | None. |
| 3. New | None. |
| 4. Replacement of one or more claims as filed as follows: | |

Claims 1-18 have been amended.

5. Result of the division of a claim as filed: None.

The claims 1-18 have been amended as follows.

Independent claim 1 has been amended to remove limitations unnecessary for patentability and to now generally recite the drill sharpener as having a point-splitting port with a guide feature that maintains a longitudinal length of the bit along a predetermined axial line and at a predetermined angular orientation with respect to said line as said material is removed by the grinding wheel assembly. Support is found at least in FIGS. 4 and 5 (note dotted axial line in FIG. 4 showing the orientation of the longitudinal length of the bit during insertion), and in the specification at page 6, lines 6-20; page 7, lines 4-6; and page 7, lines 7-17 ("The port thus allows the point to be split using a *simple push-in motion*.")

Dependent claims 2-5 have been generally amended to better conform to amended claim 1.

Dependent claim 6 has been amended to recite the point-splitting operation as being generally carried out by inserting the bit along a first orientation, removing the bit and then reinserting along a second orientation 180 degrees from the first orientation. Support is found including in the specification at page 7, lines 10-12.

Independent claim 7 has been amended to remove limitations unnecessary for patentability and to now generally recite the drill sharpener as having a point-splitting port with a guide feature that maintains a longitudinal length of the bit along a predetermined axial line and at a predetermined angular orientation with respect to said line as said material is removed by the grinding wheel assembly. Support is found at least in FIGS. 4 and 5 (note dotted axial line in FIG. 4 showing the orientation of the longitudinal length of the bit during insertion), and in the specification at page 6, lines 6-

20; page 7, lines 4-6; and page 7, lines 7-17 (“The port thus allows the point to be split using a *simple push-in motion*.”)

Dependent claims 8-11 have been generally amended to better conform to amended claim 7.

Dependent claim 12 has been amended to recite the point-splitting operation as being generally carried out by inserting the bit along a first orientation, removing the bit and then reinserting along a second orientation 180 degrees from the first orientation. Support is found including in the specification at page 7, lines 10-12.

Independent claim 13 has been amended to remove limitations deemed unnecessary for patentability and to better set forth the recited debris collector as being adapted to be removeably coupled to either one of the sharpening and point-splitting ports while the chuck is inserted into the remaining one of said ports. Support for this is found including in FIG. 6 and page 9, lines 14-19.

Dependent claims 14-18 have been amended to better conform to amended claim 13.

These amendments are believed to be proper, do not introduce new matter, and place the application in condition for reconsideration.

Rejection of Claims Under PCT Article 33(2)

The Opinion found claims 1, 2, 7 and 8 to lack novelty under PCT Article 33(2) as being anticipated by U.S. Patent No. 5,735,732 issued to Bernard (“Bernard ‘732”). This rejection is respectfully traversed.

With regard to claim 1, Bernard ‘732 fails at least to disclose “a guide feature that *maintains* a longitudinal length of the bit along a *predetermined axial line* and at a *predetermined angular orientation* with respect to said line *as said material is removed* by the grinding wheel assembly.”

Rather, Bernard ‘732 discloses a point-splitting operation wherein the user manipulates the bit during the point-splitting grinding operation by rocking or otherwise rotating the bit to remove the material between the flutes; see col. 7, line 52 to col. 8, line 12 (“Once the chuck has been firmly and fully seated in the [point-splitting] port sleeve, the operator of the sharpener may *apply force at the rear of the chuck* to

overcome the initial biasing force, and to *rotate the surface of the drill* to be ground into contact with the grinding wheel.” – col. 8, lines 1-6, emphasis added).

As disclosed in the specification of the present application, the present invention presents an improvement over the approach of Bernard ‘732 by allowing the point to be split by simply pushing the bit straight into the point-splitting port without rotation, rocking or other non-linear manipulation; see page 6, lines 6-11 and page 7, lines 15-16.

Accordingly, claim 1 defines subject matter that is patentable over Bernard ‘732, and the Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1, as well as for the claims depending therefrom.

Bernard ‘732 is similarly deficient with regard to amended independent claim 7, and therefore reconsideration and withdrawal of the rejection of claim 7, as well as the claims depending therefrom, are also respectfully solicited.

Rejection of Claims Under PCT Article 33(3)

The Opinion further found claims 13-16 to lack an inventive step pursuant to PCT Article 33(3) as being obvious over Bernard ‘732 in view of U.S. Patent No. 2,426,478 issued to Whipple (“Whipple ‘478”). This rejection is respectfully traversed.

Whipple ‘478 teaches an integrated debris collection chamber 89 bounded by wire mesh screen 90 affixed to the housing via screws 91. The Applicant agrees that integrated debris collection mechanisms such as 89, 90, 91 are known in the art, but this is insufficient to lead one skilled in the art to arrive at the recited debris collector that is adapted to be removeably coupled to *either one of the recited sharpening and point-splitting ports* while the *chuck is inserted into the remaining one of the ports*, as set forth by claim 13.

At best, Whipple ‘478 would motivate one skilled in the art to provide an integrated debris collection mechanism such as 50, 52 in the present application (see FIGS. 4, 5 and 7 and specification at page 9, lines 7-13).

Accordingly, reconsideration and withdrawal of the rejection of claims 13-16 are respectfully requested.

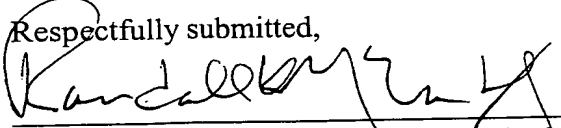
Conclusion

This is intended to be a complete response to the Written Opinion mailed 03 August 2004 (03.08.04). Favorable attention to the claims is solicited.

The Applicant's Attorney invites the Examining Authority to contact him should there be any matter which requires further comment or attention.

Respectfully submitted,

By:


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Claims:

1. A drill sharpener comprising a housing which encloses a rotatable grinding wheel assembly, the housing having a point-splitting port to facilitate a point-splitting operation upon a multi-flute drill bit to remove material between said flutes, the port comprising a guide feature that maintains a longitudinal length of the bit along a predetermined axial line and at a predetermined angular orientation with respect to said line as said material is removed by the grinding wheel assembly.
2. A drill sharpener as recited in claim 1, wherein said point-splitting port has an opening slightly larger than a barrel of a chuck to be inserted therein, the chuck adapted to hold said bit during said point-splitting operation, and wherein the guide feature cooperates with a surface of the chuck to maintain the bit along said predetermined axial line and at said predetermined angular orientation.
3. A drill sharpener as recited in claim 2, wherein the port further comprises a generally cylindrical wall of the housing and wherein the guide feature comprises a resilient portion of said generally cylindrical wall and a flange protruding radially inwardly from said resilient portion of said wall.
4. A drill sharpener as recited in claim 3, wherein said resilient portion of said wall comprises a tongue element formed in said wall and attached to said wall at one end thereof.
5. A drill sharpener as recited in claim 1, wherein the port further comprises a stop feature that limits further advancement of the bit along the predetermined axial line to limit the amount of said material removed from said bit.
6. A drill sharpener as recited in claim 1, wherein the point-splitting operation is carried out by inserting the bit into the port using the guide feature to maintain the bit in a first orientation while removing a first portion of said material from the bit, removing the bit from the port, and reinserting the bit into the port using the guide feature to maintain the bit in a second orientation that is 180 degrees

opposite the first orientation with respect to the axial line while removing a second portion of said material from the bit.

7. A drill sharpener comprising a housing which encloses a grinding wheel assembly and a chuck adapted to securely retain a multi-flute drill bit, the housing comprising a sharpening port adapted to receive the chuck to present said drill bit to the grinding wheel assembly to sharpen said flutes, the housing further comprising a point-splitting port adapted to receive the chuck to present said drill bit to the grinding wheel assembly to remove material between said flutes, wherein the point-splitting port comprises a guide feature that maintains a longitudinal length of the bit along a predetermined axial line and at a predetermined angular orientation with respect to said line as said material is removed by the grinding wheel assembly during the point-splitting operation.

8. A drill sharpener as recited in claim 7, wherein the point-splitting port has an opening slightly larger than a barrel of the chuck, and wherein the guide feature cooperates with a surface of the chuck to maintain the bit along said predetermined axial line and at said predetermined angular orientation during the point-splitting operation.

9. A drill sharpener as recited in claim 7, wherein the point-splitting port further comprises a generally cylindrical wall of the housing and wherein the guide feature comprises a resilient portion of said generally cylindrical wall and a flange protruding radially inwardly from said resilient portion of said wall.

10. A drill sharpener as recited in claim 9, wherein said resilient portion comprises a tongue element formed in said wall and attached to said wall at one end thereof.

11. A drill sharpener as recited in claim 7, wherein the point-splitting port further comprises a stop feature that limits further advancement of the bit along the predetermined axial line to limit the amount of said material removed from said bit.

12. A drill sharpener as recited in claim 7, wherein the point-splitting operation is carried out by inserting the bit into the point-splitting port using the guide feature to maintain the bit in a first orientation while removing a first portion of material from between said flutes, removing the bit from the port, and reinserting the bit into the port using the guide feature to maintain the bit in a second orientation that is 180 degrees opposite the first orientation with respect to the axial line while removing a second portion of said material from between said flutes.

13. A drill sharpener comprising:
a chuck adapted to securely retain a multi-flute drill bit;
a housing which encloses a grinding wheel assembly, the housing comprising
a sharpening port adapted to receive the chuck to present said drill bit
to the grinding wheel assembly to sharpen said flutes and a point-
splitting port adapted to receive the chuck to present said drill bit to the
grinding wheel assembly to remove material between said flutes; and
a debris collector to collect debris from the grinding wheel assembly, wherein
the collector is adapted to be removeably coupled to either one of said
ports while the chuck is inserted into the remaining one of said ports.

14. A drill sharpener as recited in claim 13, wherein said debris collector comprises a hollow body and a cap secured at an end of the body opposite an end that interfaces with said ports.

15. A drill sharpener as recited in claim 14, wherein said cap is vented to permit gas to flow therethrough while substantially preventing solid particles of selected size from exiting said cap.

16. A drill sharpener as recited in claim 14, wherein said cap is removable from said body.

17. A drill sharpener as recited in claim 13, wherein the debris collector is further adapted to be connected to a vacuum hose.

18. A drill sharpener as recited in claim 13, wherein the debris collector forms an elbow so that the collector can be canted downwardly when inserted into said ports.